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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/724,303	11/28/2000	Denis Claveloux	2386.1045-004	5360
21005	7590	09/20/2004	EXAMINER	
HAMILTON, BROOK, SMITH & REYNOLDS, P.C. 530 VIRGINIA ROAD P.O. BOX 9133 CONCORD, MA 01742-9133			LEVITAN, DMITRY	
			ART UNIT	PAPER NUMBER
			2662	

DATE MAILED: 09/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/724,303

Applicant(s)

CLAVELOUX ET AL.

Examiner

Dmitry Levitan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4,6-10</u> . | 6) <input type="checkbox"/> Other: ____ |

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-4, 9, 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Whitton (US 6,172,964).

Regarding claims 1 and 9, Whitton teaches a method and a device for providing clock timing in a receiver (network interface device 1:57-67), comprising:

Providing a local clock signal having a reference frequency (regenerated clock provided by local source 12, counter 11 and pulse stretcher 13 on Fig. 1);

Receiving a stream of data cells in a receiver buffer (input FIFO 4 on Fig. 1 and 2:54-55);

Servicing the receiver buffer to remove the data cells at a servicing rate based on the local clock signal (regenerated clock signal 3:1-12);

Monitoring fullness of the receiver buffer at a monitoring interval (FIFO status register 8 and controller 9 on Fig. 1 and 1:7-15);

Upon buffer fullness exceeding a high threshold, adjusting the clock reference frequency upwards;

Upon buffer fullness dropping below a low threshold, adjusting the clock reference frequency downwards (regenerated clock adjustment 3:46-56 and 2:1-6).

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Regarding claims 2 and 10, Whitton teaches generating the local clock signal by dividing a local oscillator signal (local clock 12 4:2-3) by a clock divisor (control register 10 and counter 11 on Fig. 1 and 4:3-12) and wherein adjusting the clock reference frequency includes adjusting the clock divisor (4:13-19).

Regarding claims 3 and 4, Whitton teaches the buffer fullness nominal threshold between high and low thresholds and adjusting the clock reference frequency accordingly when it deviates from the nominal threshold level (initial predetermined fill level 2:19-30, inherently located between upper and lower limits of the buffer, because the system operates to minimize the regenerated frequency variation).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 7, 8, 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Whitton in view of Bernstein (US 5,912,880).

Whitton substantially teaches the limitations of claims 7 and 8.

Whitton does not teach receiving cells from plural VCs and selecting one of the VCs for the receiving buffer to monitor fullness of the buffer.

Bernstein teaches receiving cells from plural VCs and selecting one of the VCs for the receiving buffer to monitor fullness of the buffer (focusing on cells from only one VC and using selected

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cells to correct timing 3:25-51). It would have been obvious to one of ordinary skill in the art at the time the invention was made to add receiving cells from plural VCs and selecting one of the VCs for the receiving buffer to monitor fullness of the buffer of Bernstein to the system of Whitton to improve the system synchronization with the most stable or important source/VC.

5. Claims 5 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Whitton in view of Berstein and Lauret (US 6,252,850).

Whitton substantially teaches the limitations of claims 1 and 9, including synchronization using CBR ATM cells (1:16-18).

Whitton does not teach cell stream is an AAL1 stream and the monitoring interval comprises a number of ATM cell periods.

Berstein teaches monitoring interval comprises a number of ATM cell periods (a predetermined number of cells 2:2-8).

Lauret teaches cell stream is an AAL1 stream (using AAL1 for CBR services 1:21-40).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add clarifying the cell stream as an AAL1 stream of Lauret and comprising the monitoring interval using a number of ATM cells of Berstein to the system of Whitton to improve the system compatibility with a popular ATM standard and the quality of the recovered timing.

6. Claims 6 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Whitton, Bernstein and Lauret.

Whitton, Bernstein and Lauret substantially teach the limitations of claims 5 and 11.

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Whitton, Bernstein and Lauret do not teach performing a function if it occurs for number of times. Official notice is taken that performing a function if it occurs for number of times (like requiring several signal value estimates in noisy or random environment) is well known and expected in the art.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to perform a function if it occurs for number of times in the system of Whitton, Bernstein and Lauret to improve the system operation in noisy or random network environment.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Dualt	US005996018A	Method and apparatus to reduce jitter and delay.
Chao	US005204882A	Service clock recovery for VBR services.
Bassi	US006005872A	Method and device for synchronizing digital recorder.
Gulick	US005778218A	Method and apparatus for clock synchronization.
Cox	US005844891A	Cell-based clock recovery device.
Silveira	US006603831B1	Synchronous digital transmitter.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dmitry Levitan whose telephone number is (571) 272-3093. The examiner can normally be reached on 8:30 to 4:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Dmitry Levitan
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09/13/04.



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